
Appendix A: NT0R72, NT6D82, QBL12, QBL15, QCA13

DC-powered systems generally require one AC-input receptacle per rectifier within 1.8 m (6 ft) of each rectifier. The input receptacles required are determined by the number and type of rectifiers used.

Note: Depending on the distance between the input receptacle and the pedestal, a junction box may be required if the column is equipped with a vintage AA or DA NT7D10 PDU. A junction box may be used with the NT7D67CB PDU, but it is not required.

For information on customer-supplied power equipment, refer to Appendix D: “Customer supplied power equipment” on page 501.

Installing an NT6D82 Power System

The NT6D82 Power System can be used with all system options, but it is optimized for options 71 and 81 (and larger option 61 and 61C configurations).

The NT6D82 Power System is an enclosed, front-access power distribution and control panel that supports from one to three 100-amp rectifiers per rack. One to three racks can be paralleled in a single configuration. The maximum capacity of three fully equipped racks is 900 amps.

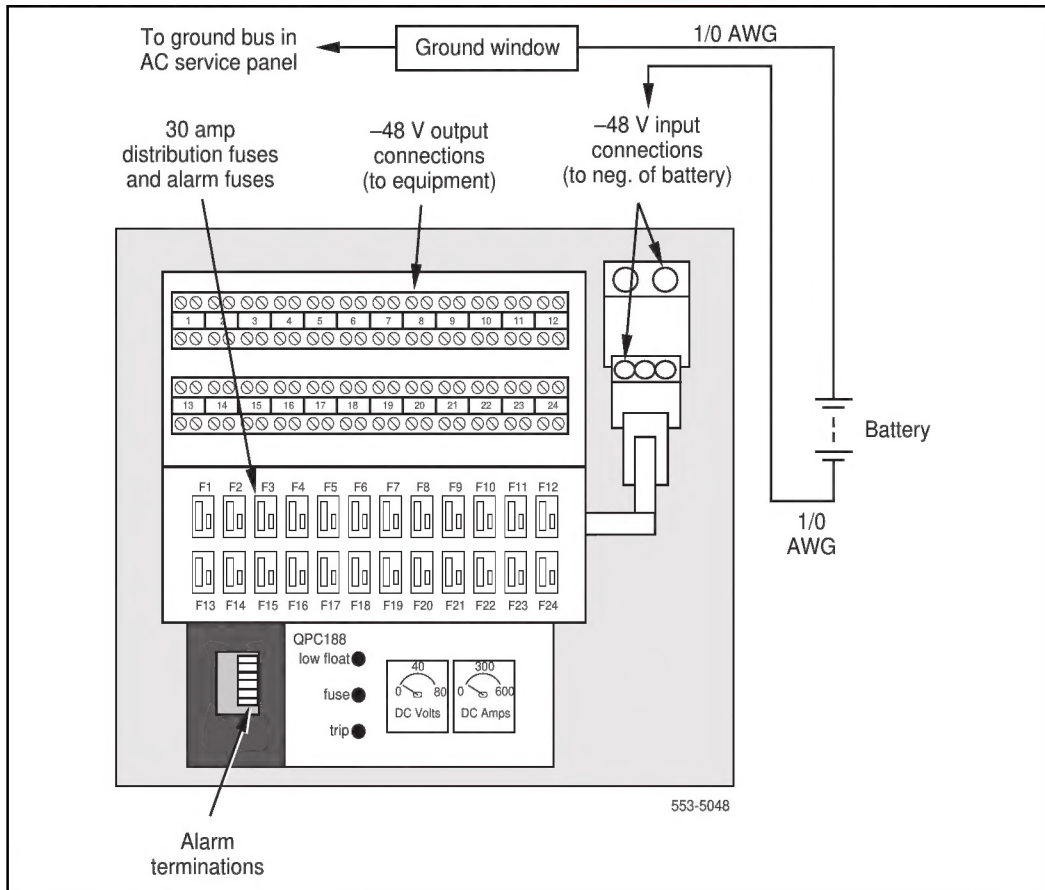
The rectifiers in an NT6D82 operate on single-phase, 60 Hz, AC service and can be strapped for either 120, 208, or 240 V nominal input. The NT6D82 Power System requires one 50-amp power feed per rectifier.

To install an NT6D82 Power System, follow the instructions provided with the NT6D82 equipment.

Installing a QBL12 distribution box

The QBL12 Power Distribution Box is a wall-mounted unit that connects a customer-provided power plant to options 71 and 81 (and larger option 61 and 61C configurations) (see [Figure 160](#)).

Figure 160
QBL12 distribution box



The QBL12 distribution box connects up to 12 Meridian 1 columns (48 modules), with a maximum allowable load current of 600 amps. The distribution box contains 24 distribution fuses. Each distribution fuse supports two modules. Generally, one QBL12 is required per system.

For the receptacle requirements for the customer-provided power plant, refer to the manufacturer's specifications.

Installing a QBL12 and connecting to the power plant or batteries

If batteries are used, follow directions from the power plant manufacturer to connect the batteries to the power plant.

[Table 161](#) summarizes the connections in this procedure.

- 1** Unpack the distribution box. Check for damage to the unit or the meters. Report any damage to your supplier.
- 2** Mount the distribution box securely on a wall or other suitable surface:
 - Mount the unit with its bottom edge approximately 1.2 m (4 ft) from the floor within 1.8 m (6 ft) of the power plant.
 - If batteries are used, mount the unit close enough to the batteries to allow a voltage drop of not more than .25 V (.50 V on the loop) on the wire between the QBL12 and the batteries. See *Meridian 1 power engineering* (553-3001-152) to calculate wire size.
- 3** Connect a black wire between the positive terminal of the power plant or battery string and the system ground source (ground window/LRE) (see [Figure 162](#)).

Typically, this connection is to a ground window that is connected to the ground bus in the service panel.

- 4** Connect a red wire between the negative output terminal of the power plant or battery string and the -48 V input terminal in the QBL12.

- 5 Connect a #16 AWG wire between the positive terminal of the power plant or battery string and connector TB3-2 (+ SENSE) of the QBL12 (see [Figure 163](#)).
- 6 Connect a #16 AWG wire between the negative terminal of the power plant or battery string and connector TB3-1 (– SENSE) of the QBL12.
- 7 Connect a #16 AWG wire between the DCON connection in the rectifier and connector TB3-6 (DCON) in the QBL12.

Note: A wire gauge smaller than #16 can be used if it does not provide more than 2.5 ohms of resistance across its entire length.

Figure 161
QBL12 cabling

AWG (typical)	Color	From power plant or battery string	To
#1/0	Black	Positive terminal	System ground source
#1/0	Red	Negative terminal	–48 V input terminal in QBL12
#16	—	Positive terminal	TB3-2 (+ SENSE) in QBL12
#16	—	Negative terminal	TB3-1 (– SENSE) in QBL12
#16	—	DCON connection (in rectifier)	TB3-6 (DCON) in QBL12

Figure 162
QBL12 –48 V and ground connections

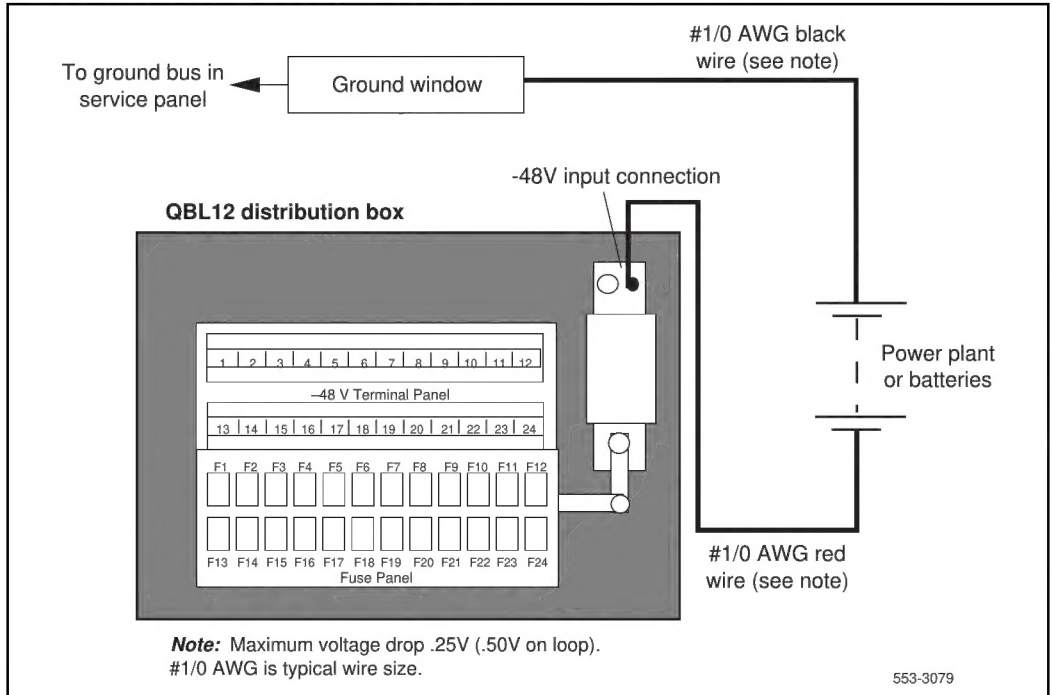
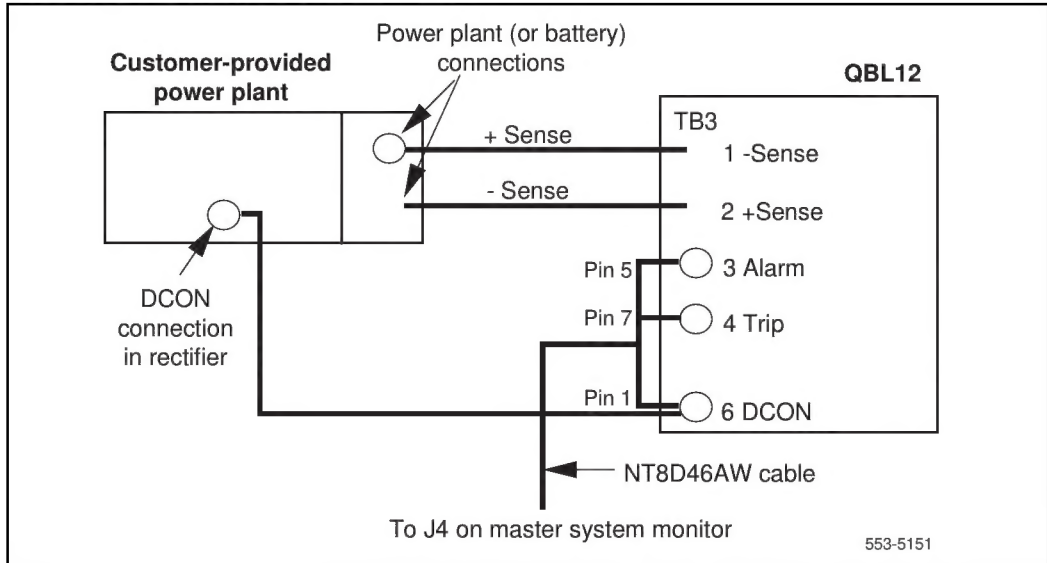


Figure 163
QBL12 SENSE and DCON connections



Installing a QBL15 power system

A power plant consisting of the QBL15 Power Distribution Box and NT6D52 or NT0R72 Switched Mode Rectifier can be used with options 21, 21E, 51, 51C, 61, and 61C. The NT6D52 are discontinued and are replaced by NT0R72 rectifiers.

One QBL15 distribution box is needed for every three NT6D52 or NT0R72 rectifiers; up to two QBL15 units can be used per system. This means a QBL15 power system can support a total of six rectifiers that support a maximum of twelve modules.

NT0R72 rectifiers operate on 240 V ac at 20 amps input current.

NT6D52 rectifiers operate on 240 V ac at 20 amps or 120 V ac at 30 amps.

Each rectifier comes equipped with a 20-amp cord and plug for use at 205/240 V ac. One IG-L6-20 or L6-20 receptacle is required for each rectifier.

Note: Do not exceed minimum and maximum input voltage limits of 180 to 250 V ac for NT6D52 rectifiers and 176 to 280 V ac for NT0R72 rectifiers. If only 240 V ac service is available, use a voltage regulation device so the 250 V ac limit cannot be exceeded.

Refer to [Figures 164](#) and [165](#) throughout the procedures for installing QBL15 distribution boxes and NT0R72 rectifiers.

The dimensions of the QBL15 components are given in [Table 112](#).

Table 112
Equipment dimensions

Equipment	Width		Depth		Height	
	cm	in.	cm	in.	cm	in.
NT6R52 Rectifier	48.3	19.0	35.6	14.0	25.4	10.0
NT0R72 Rectifier	48.3	19.0	35.6	14.0	25.4	10.0
NT7D12 Rectifier Rack	52.7	20.5	38.1	15.0	132.0	52.0
QBL15 Power Distribution Box	55.9	22.0	24.1	9.5	63.5	25.0

Figure 164
NT0R72 rectifier—front view

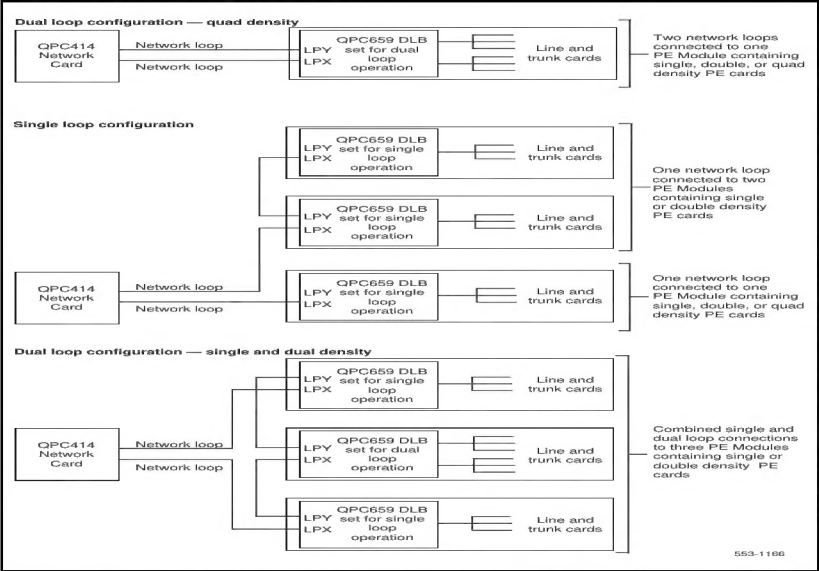
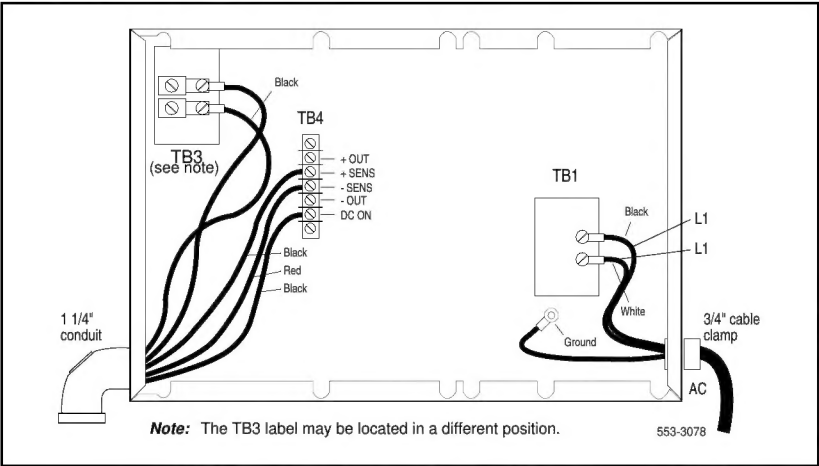


Figure 165
NT0R72 rectifier—rear view



Mounting NT0R72 rectifiers

Use this procedure to install NT0R72 rectifiers in an NT7D12 rectifier rack. The NT7D12 Rectifier Rack Assembly supports up to three rectifiers. Up to two racks can be used per system.

Each rectifier requires one NT7D1204 Mounting hardware kit and a NT7D1201 Rectifier Baffle assembly that consists of a set of support brackets and a heat baffle plate.

- 1 Position the rectifier rack. Install a bolt in each of the four holes at the base of the rack to secure the rack to the floor.
- 2 If not already installed, mount an NT7D1201 baffle assembly on the rack directly below the space for the rectifier (see [Figure 166](#)).

Secure the baffle assembly to the rack with the eight mounting screws provided (see [Figure 167](#)).

- 3 Attach NT7D1204 Mounting brackets to NT0R72 rectifiers (see [Table 117](#))
- 4 Mount the rectifier directly above the baffle assembly. Secure the rectifier to the rack with eight mounting screws and to the baffle assembly with two self-tapping screws (see [Figure 168](#)).

Note: For proper weight distribution, install rectifiers starting at the *bottom* of the rectifier rack.

- 5 Remove the rear cover from the rectifier (leave the cover off until the rectifier and the QBL15 distribution box are connected).
- 6 If the AC power cord is not installed, connect it to the rear of the rectifier as shown in [Figure 165](#). Do *not* connect it to the commercial power outlet at this point.
- 7 Perform continuity test from the ground prong on the power cord to the rectifier chassis.
- 8 Install a 1-1/4 in. conduit fitting as shown in [Figure 165](#).
- 9 Neatly secure the AC power cord and other external wiring to the rectifier rack with plastic cable ties.

Figure 166
NT0R72 rectifiers and NT7D12 rectifier rack

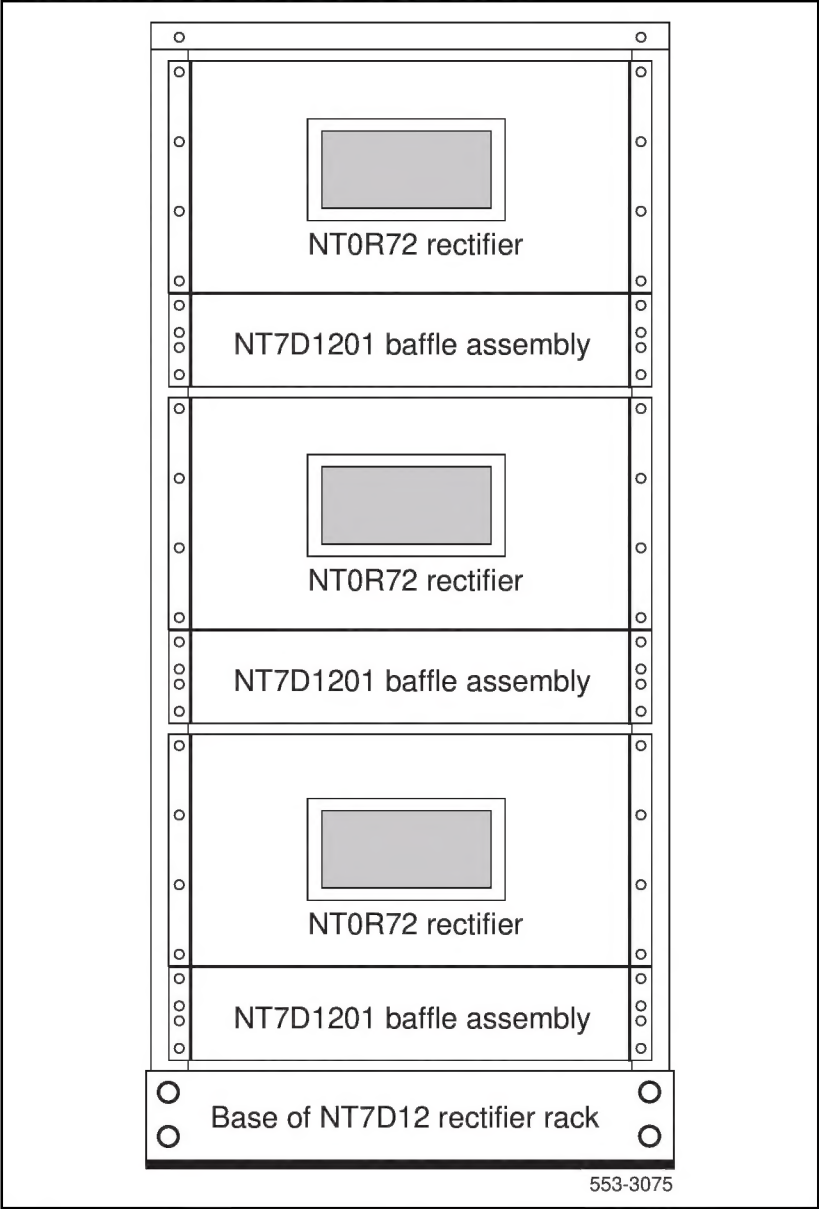


Figure 167
NT7D1201 baffle assembly mounted in rack

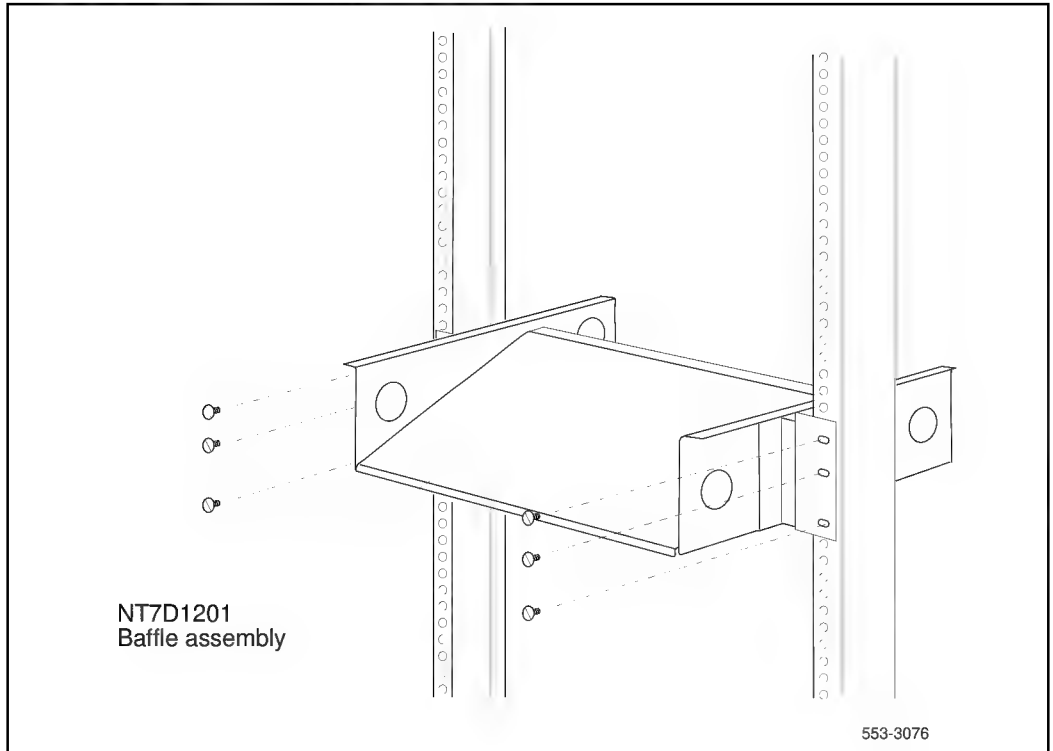
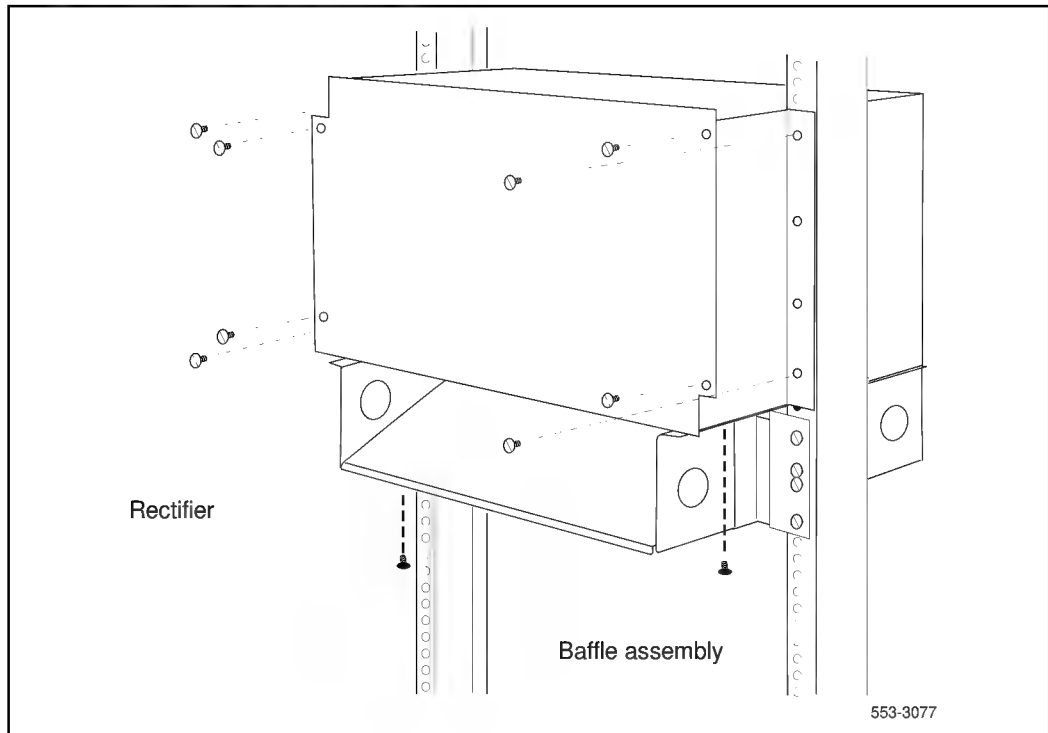


Figure 168
NT0R72 rectifier mounted in rack



Measuring and adjusting NT0R72 rectifiers

Use this procedure to measure and adjust the high voltage shutdown and float voltage for each NT0R72 rectifier.

Note: Although rectifiers are adjusted during manufacture, they should be measured and, if necessary, readjusted on site.

- 1 Set the AC BRKR switch on the front of the rectifier to OFF. If connected, disconnect the power cord.
- 2 If connected, disconnect the wires from the +SENS and -SENS terminals on TB4. Install one jumper from the +OUT terminal to the +SENS terminal and another jumper from the -OUT terminal to the -SENS terminal on TB4 (see [Figure 165](#)).
- 3 Connect a voltmeter to the +OUT and -OUT terminals on TB4.
- 4 Plug the power cord into the commercial power outlet. Set the DC circuit breaker to ON and set the AC BRKR switch to ON, wait for the ON/RFA LED to turn GREEN.
- 5 Check the voltmeter. Slowly turn the FLT (float voltage adjustment, see [Figure 164](#)) potentiometer clockwise and note the output voltage level where high voltage shutdown occurs. Record this voltage.
- 6 Slowly turn the FLT potentiometer slightly counterclockwise to lower the rectifier output voltage to a point just below the shutdown voltage. Reset the rectifier by setting the AC BRKR switch to OFF, then back to ON.

If the shutdown voltage you recorded does not fall within the range of acceptable values (see [Table 113](#)), adjust the rectifier as follows:

- Turn the HVSD (high voltage shutdown adjustment, (see [Figure 164](#)) potentiometer fully clockwise.
- Check the voltmeter. Turn the FLT potentiometer until the voltmeter indicates the desired high voltage shutdown value.
- Slowly turn the HVSD potentiometer counterclockwise and stop when the ON/RFA LED turns RED and the voltmeter reading drops to approximately 0 volts, indicating that the rectifier has shut down.

- Turn the FLT potentiometer 1/4 turn counterclockwise.
 - Set the AC BRKR switch to OFF, then back to ON.
 - Check the voltmeter. Slowly turn the FLT potentiometer clockwise. The voltmeter reading should increase until the desired high voltage shutdown value is reached and then drop to 0 volts.
 - If necessary, repeat these adjustments until the desired level for high voltage shutdown is set.
- 7 Turn the FLT potentiometer to obtain the desired float voltage reading (see [Table 113](#)). Set the AC circuit breaker to OFF and then back ON.
- 8 If wires were removed from the SENS terminals on TB4, remove the jumper straps and reconnect the black wire to +SENS and the red wire to -SENS. Store the jumper straps under the two screws provided adjacent to TB4.
- 9 Perform this procedure on each rectifier.

Table 113
Rectifier settings

Specification	Range
High voltage shutdown	–56.5 to –57.5 V
Float voltage	–51.5 to –54.0 V

Installing a QBL15 distribution box

Use this procedure to install and connect a QBL15 distribution box. When two QBL15 units are installed, connect the battery only to the distribution box with the functional circuit breaker.

[Table 114](#) summarizes the connections in this procedure.

- 1 Unpack the QBL15. Inspect the unit and the meters for damage.

CAUTION

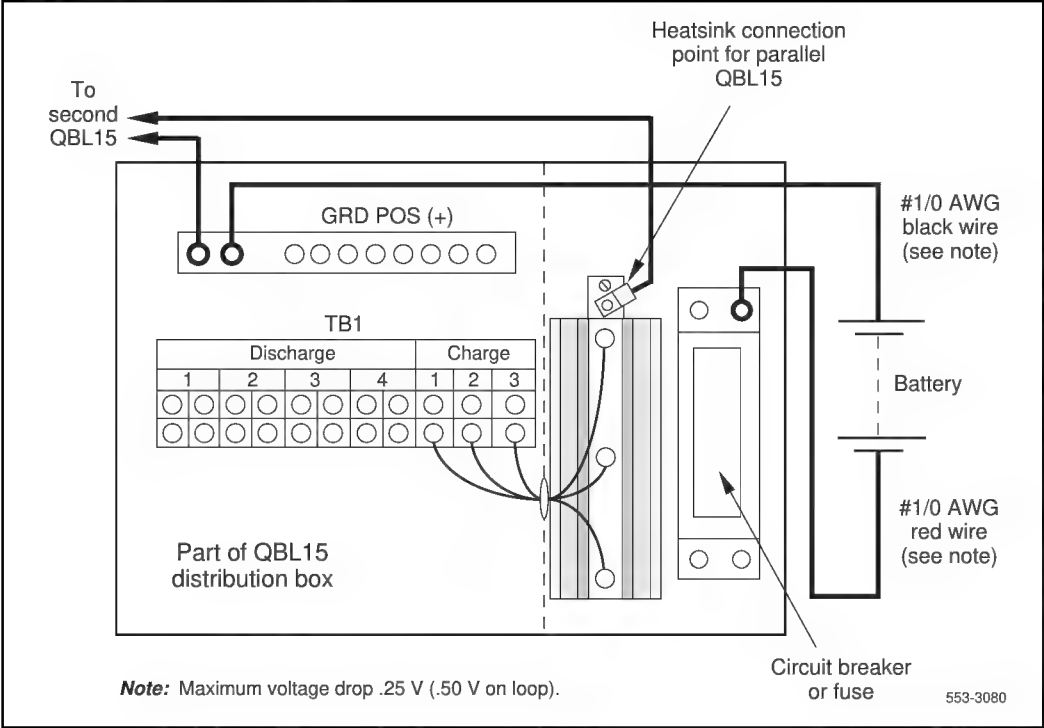
The QBL15 distribution box weighs approximately 25 kg (50 lb).

- 2 Mount the distribution box securely on a wall or other suitable surface:
 - Mount the unit approximately 1.2 m (4 ft) from the floor.
 - If batteries are used, mount the unit close enough to the batteries to allow a voltage drop of not more than .25 V (.50 V on the loop) on the #1/0 AWG wire between it and the batteries.
- 3 Open the front cover of the QBL15 and remove the plate that covers the main circuit breaker (or main fuse—CRS200). Set the circuit breaker to OFF (or remove the fuse).
- 4 Install and connect a red #1/0 AWG wire between the negative terminal of the battery string and the negative input at the top of the circuit breaker (or fuse) in the QBL15 (see [Figure 169](#)).
- 5 Install and connect a black #1/0 AWG wire between the positive terminal of the battery string and the positive bus in the QBL15.
- 6 Replace the plate that covers the main circuit breaker (or fuse). Leave the front cover open to connect the QBL15 to the rectifiers.

Table 114
Cabling to connect a QBL15 to batteries

AWG	Color	From battery string	To QBL15
#1/0	Red	Negative terminal	Negative input at the top of the circuit breaker (or fuse)
#1/0	Black	Positive terminal	Positive bus

Figure 169
QBL15 battery connections



Adding a second QBL15

[Table 115](#) summarizes the connections in this procedure.

- 1 Unpack and mount the QBL15.
- 2 Open the front cover of the unit and remove the plate that covers the main circuit breaker (or main fuse—CRS200).
- 3 Install and connect a red #4 AWG wire between the initially installed QBL15 and the second QBL15.
 - Before you install the wire, crimp a ring lug on each end, or use a compression fitting like the type on the positive bus.
 - The connection point on each unit is a 1/4-20 stud located at the top of the large heatsink (see [Figure 169](#)). Note that there are already four wires connected to the stud.
- 4 Install and connect a black #4 AWG wire between the initially installed QBL15 and the second QBL15. The connection point on each unit is a compression fitting, labeled GND POS (+), on the positive bus.
- 5 Do not set the main circuit breaker of the second QBL15 to ON (or do not reinsert the main fuse in the box).
- 6 Replace the plate that covers the main circuit breaker (or main fuse). Place a tag labeled “CIRCUIT BREAKER IS NON-FUNCTIONAL” on the circuit breaker in the second QBL15.

Table 115
Cabling to add a second QBL15

AWG	Color	From first QBL15	To second QBL15
#4	Red	Stud on the heatsink	Stud on the heatsink
#4	Black	GND POS (+)	GND POS (+)

Connecting NT0R72 rectifiers to the QBL15 distribution box

All wiring between the QBL15 and the rectifier must be contained in the same conduit. A 1-1/4 in., or equivalent, flexible-type conduit is required. Install the conduit in one of the conduit openings on the top of the QBL15 (choose one of the openings near the rear so the door can be closed).

One NT6D54 field wiring kit is required for every three rectifiers connected to a QBL15. The kit contains one male connector (A0290885), two mounts for cable ties (P0594300), four connector contacts (A0290890), and two cable ties (P0567232).

Table 116 summarizes the connections for this procedure.

- 1** In each rectifier, install #4 AWG wires for –48 V and 48 V return connections (see Figure 170):
 - The wires must not be longer than 30 m (100 ft).
 - For 48 V return, connect a black wire from terminal 2 on TB3 in the rectifier to the positive bus in the QBL15.
 - For –48 V, connect a red wire from terminal 1 on TB3 in the rectifier to charge terminal 1, 2, or 3 on TB1 in the QBL15.
- 2** In each rectifier, install #22 AWG wires for + SENS, – SENS, and DCON connections (see Figure 170). (A full pair of #24 AWG station wire can be used instead of one, #22 AWG wire. Wrap appropriately colored tape near the ends of each station-wire pair.)

Note: The (+) and (–) sense lead pairs from a rectifier must connect to TB3 in the QBL15, with the first rectifier connected to TB3-1 and TB3-2 (+ and – sense, respectively). A second rectifier connects to TB3-3 and TB3-4, etc.

- Connect a black wire between the + SENS terminal on TB4 in the rectifier and terminal 1, 3, or 5 on TB3 in the QBL15.
- Connect a red wire between the – SENS terminal on TB4 in the rectifier and terminal 2, 4, or 6 on TB3 in the QBL15.
- Connect a blue wire to the DCON terminal on TB4 in the rectifier. This wire will connect to the field wiring kit (installed in the next step) in the QBL15.

- 3** Install an NT6D54 field wiring kit in the QBL15 (see [Figure 171](#)).
 - Remove approximately 6 mm (1/4 in.) of insulation from the end of the blue DCON wires from terminal 5 on TB4 in the rectifiers.
 - With an AMP 90296-type crimping tool, install one connector contact (A0290890) on the skinned wires.
 - Label the wires DCON 0, DCON 1, or DCON 2 as appropriate.
 - Insert the connector contact in the male connector (A0290885).
 - Connect the male connector to the female connector (A0290886) on the end of the NT8D46AT cable to the system monitor.
 - Secure the DCON connectors to the left inside panel of the QBL15 with the cable tie mounts and cable ties supplied with the kit.
- 4** Make sure all rectifiers in the system are properly connected.
- 5** Set the AC circuit breakers on all rectifiers to OFF and all circuit breakers on all Meridian 1 columns to OFF.
- 6** Set the CB0 circuit breaker on just one Meridian 1 column to ON to establish a minimum load.
- 7** Adjust rectifier float voltage as follows:
 - Set the AC and DC circuit breaker on a single rectifier to ON.
 - At the QBL15, connect a voltmeter to the (+) and (–) test points (located with the QPC188 Battery Monitor). Adjust the FLT potentiometer on the energized rectifier to obtain the desired float voltage reading, ± 5 mV dc.
 - Set the AC circuit breaker to OFF.
- 8** Repeat step 7 for all remaining rectifiers in the system.
- 9** Disconnect all rectifier power cords until the system is placed in service.

Table 116
Cabling to connect NT0R72 rectifiers to the QBL15 distribution box

AWG	Color	Connection	From rectifier	To QBL15
#4	Black	48 V return	Terminal 2 on TB3	GRD POS (+)
#4	Red	−48 V	Terminal 1 on TB3	Terminal 9, 10, or 11 on TB1
#22	Black	+ sense	+ SENS terminal on TB4	Terminal 1, 3, or 5 on TB3
#22	Red	− sense	− SENS terminal on TB4	Terminal 2, 4, or 6 on TB3
#22	Blue	DCON	DCON terminal on TB4	Field wiring kit; see Figure 169

Figure 170
Rectifier to QBL15 connections

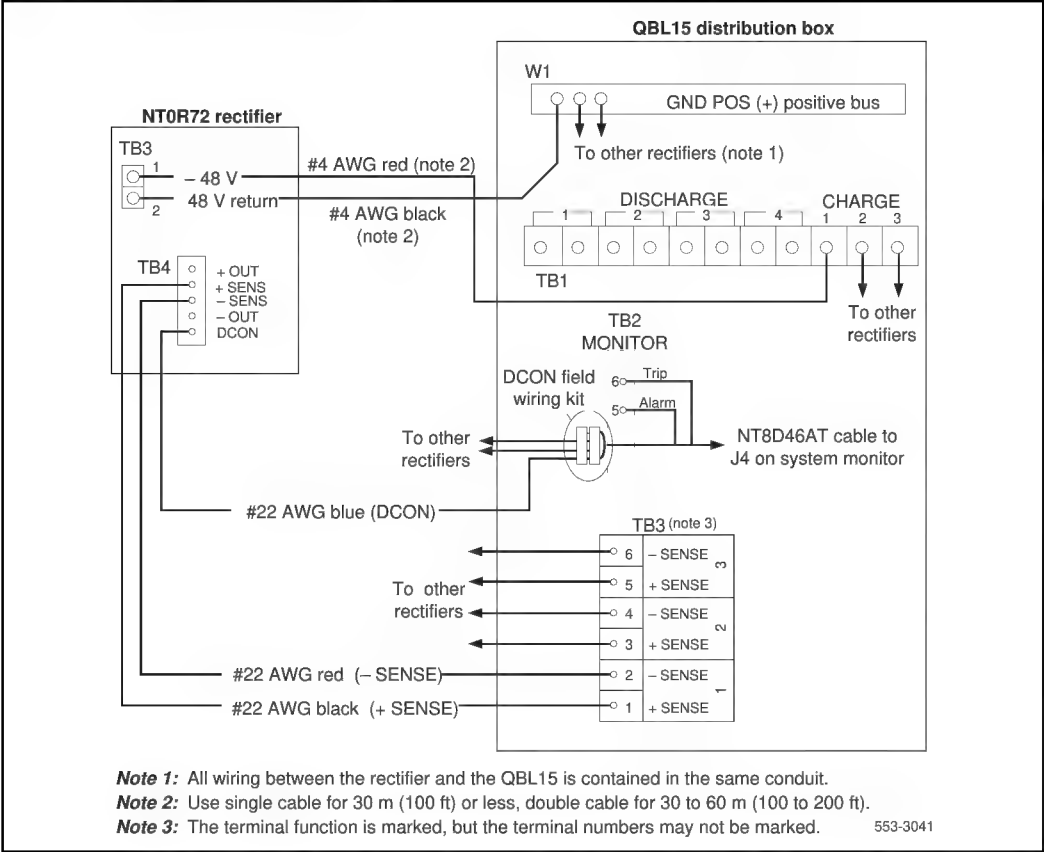
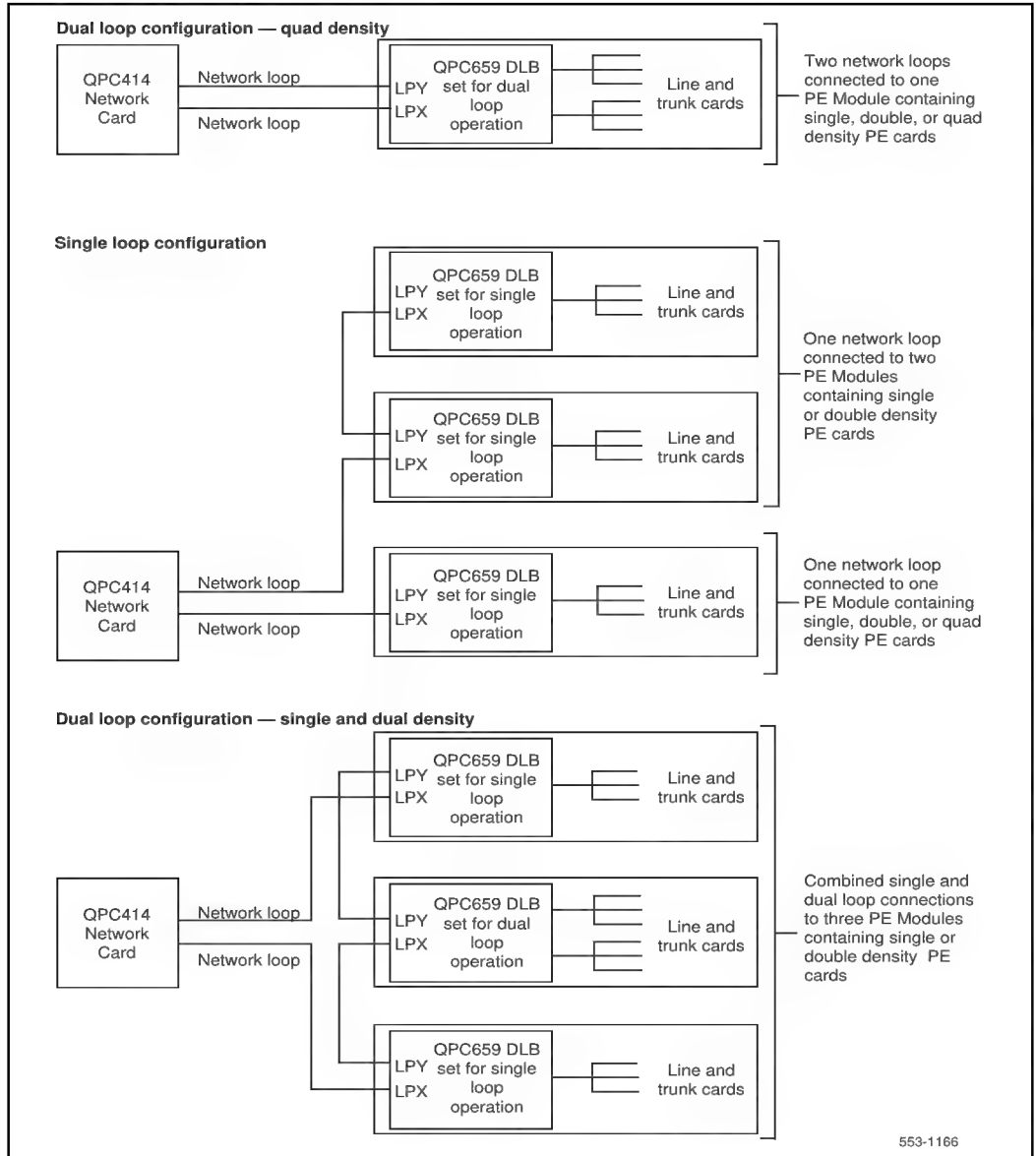


Figure 171
NT6D54 field wiring kit connections



Installing a QCA13 power plant

The QCA13 DC Power Plant can be used with options 71 and 81 (and larger option 61 and 61C configurations).

The QCA13 consists of fusing and distribution hardware, monitoring and control equipment, and up to four NT5C03 rectifiers. Up to two supplemental cabinets can be added, with up to four rectifiers in the first supplemental cabinet and up to two rectifiers in the second cabinet, for a total of ten rectifiers and a total system capacity of 500 amps.

Each of these rectifiers operates from a nominal 208/240 V ac at 23/21 amps. Each rectifier is generally hard-wired to the commercial power source. One 30-amp circuit is required for each rectifier.

To install a QCA13, follow the instructions provided with the QCA13 equipment.

Installing safety ground/protective earth and logic return wiring

The single point ground required by the system can be an isolated ground (IG) bus or AC equipment ground (ACEG) bus in the service panel or transformer. The system is to be connected to safety ground/protective earth in accordance with national requirements. For international use, the system is to be connected to safety ground/protective earth in accordance with Paragraph 2.5 of EN60950/IEC950.

Note: Refer to *Meridian 1 installation planning* (553-3001-120) for a complete description of approved ground sources and methods. Insulated ground wire must be used for system grounding.

Depending on the distances between columns and the service panel, safety ground/protective earth wiring can be daisy-chained or run independently from each column to the service panel.

[Figures 172, 173, 174](#), and [175](#) show the ACEG as the single point ground and safety ground/protective earth wiring in daisy-chain configurations.

Multiple-column systems often use a logic return equalizer (LRE) as the point where the logic return wires from different columns are consolidated before connecting to the single point ground. The NT6D5303 large LRE (usually used with DC power systems) is available from Northern Telecom.

The LRE used with the QBL12 is a copper bus bar that is mounted on a wall next to the QBL12. The positive bus in the QBL15 is used as the LRE. The LRE used with the QCA13 is located on top of the QCA13 cabinet. The LRE used with the NT6D82 is a copper bus bar mounted in the control/distribution panel or the power plant.

[Figures 172, 173, 174](#), and [175](#) show the logic return points and wiring configurations.

Figure 172
NT8D62 Ground and logic return distribution—NT6D82 Power System

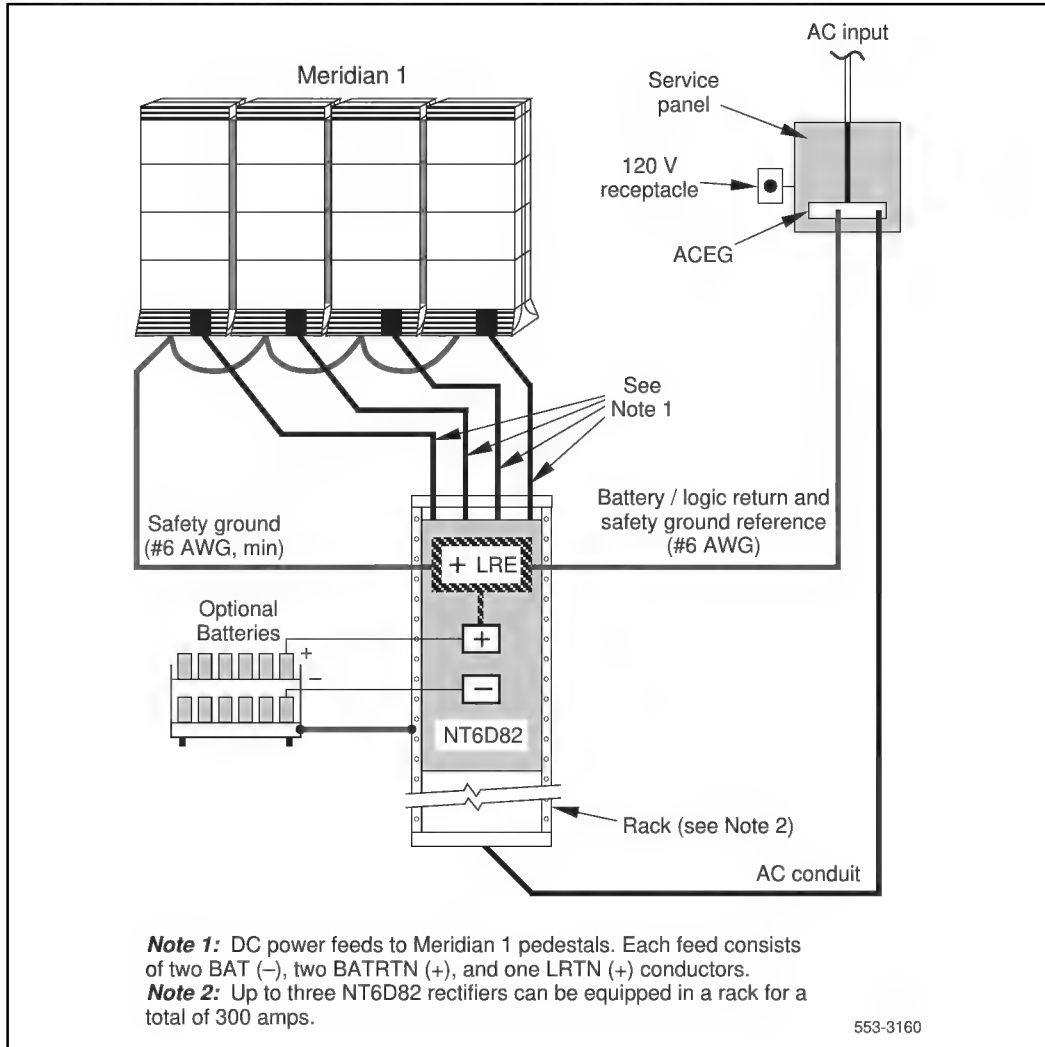


Figure 173
QBL12 ground and logic return distribution

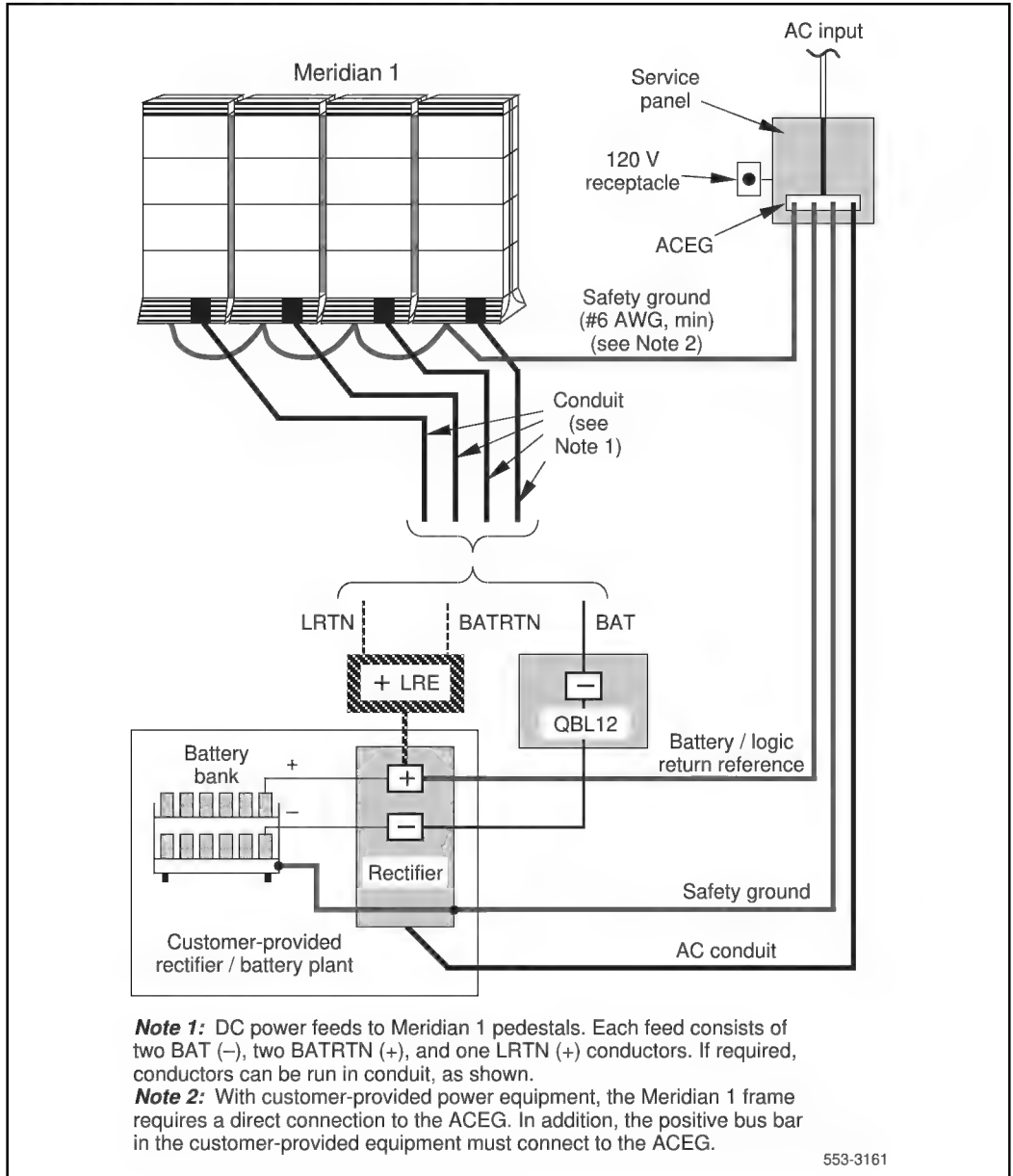


Figure 174
QBL15 ground and logic return distribution

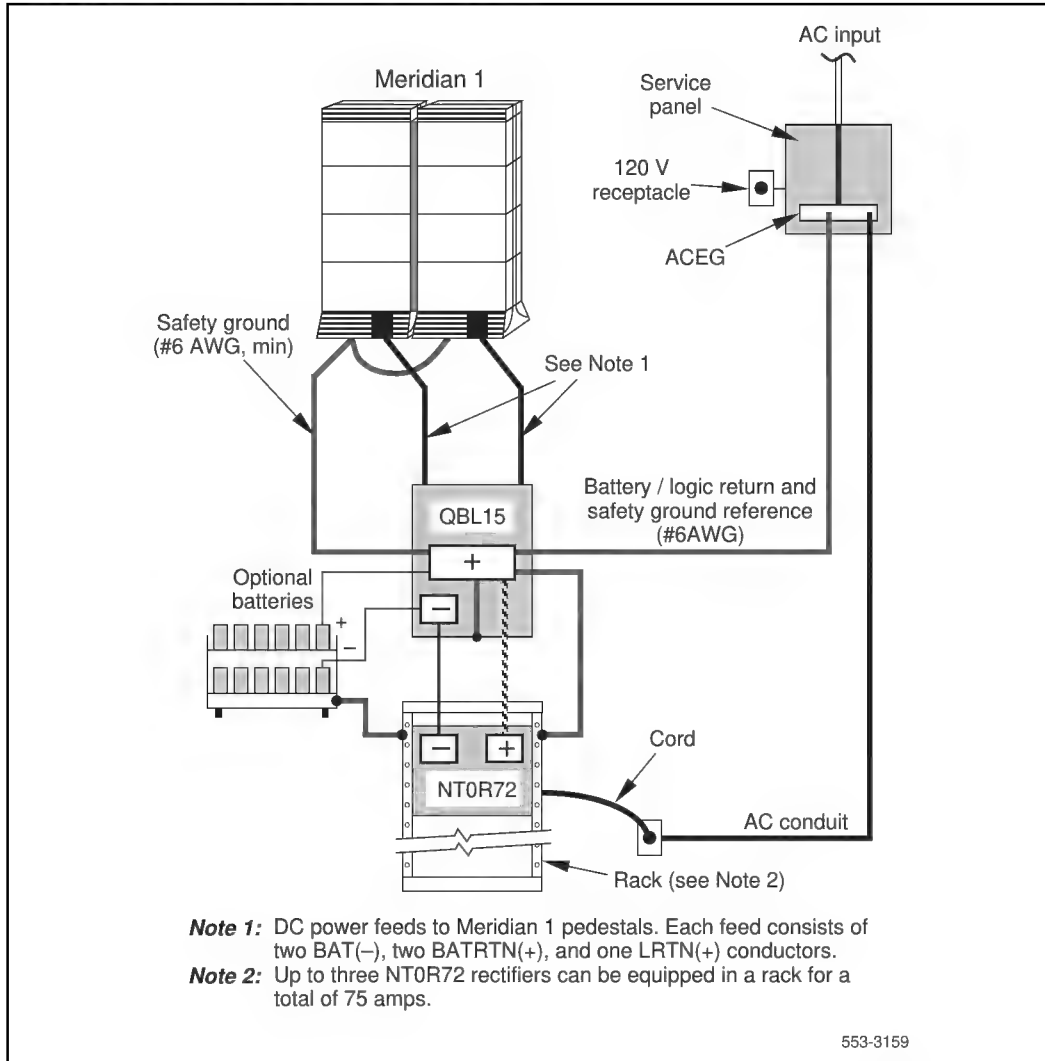
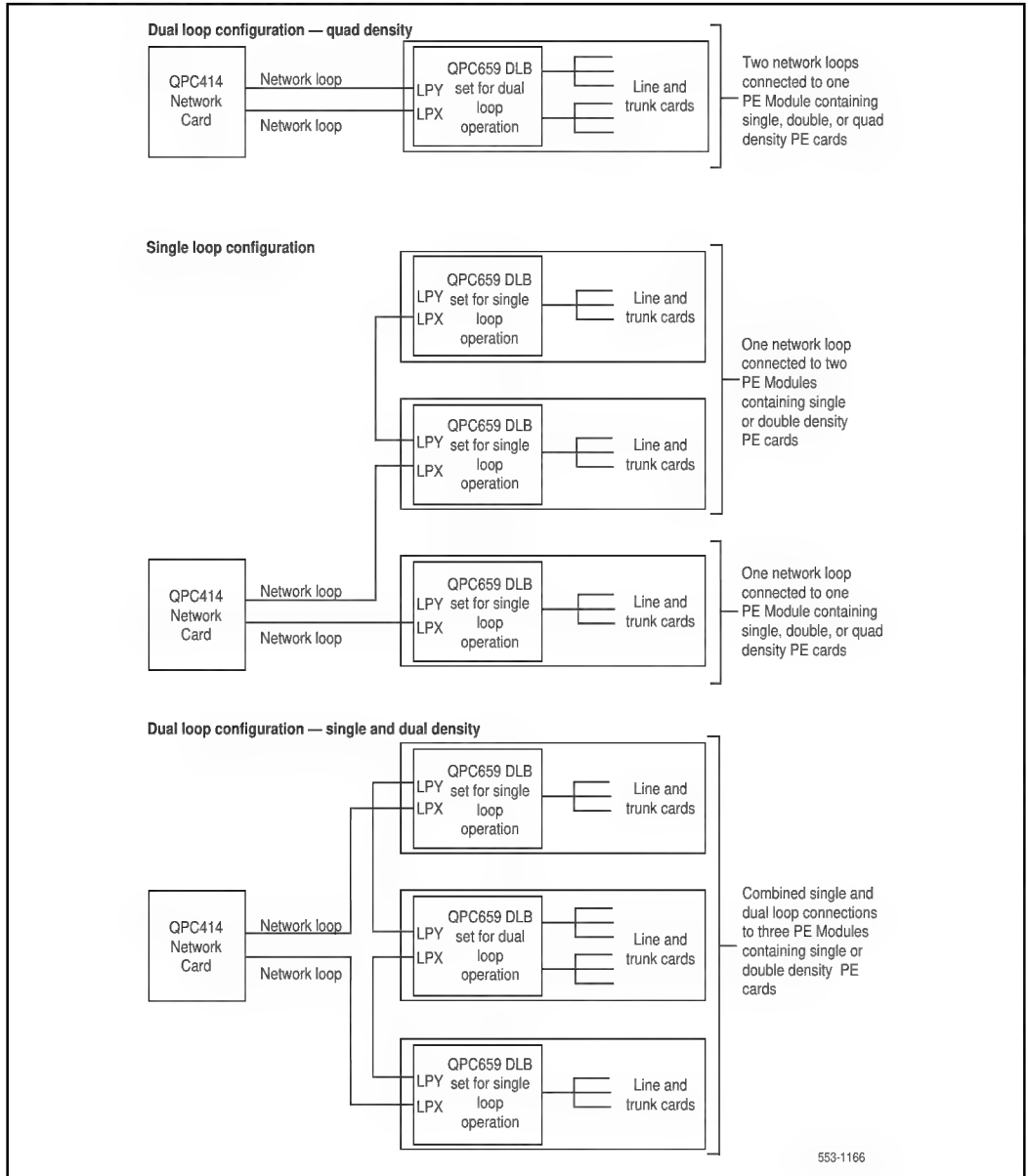


Figure 175
QCA13 ground and logic return distribution



Installing safety ground/protective earth wiring

WARNING

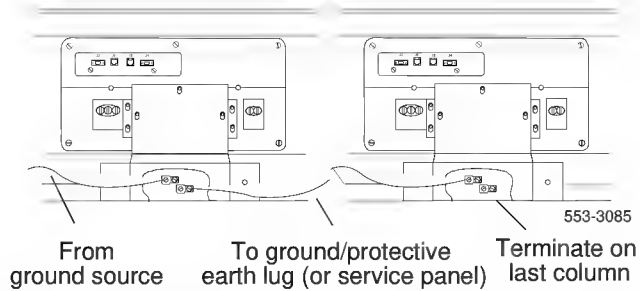
Failure to follow grounding procedures can result in unsafe or faulty equipment. See *Meridian 1 installation planning* (553-3001-120) for a complete description of approved ground sources and methods.

- 1 Make sure all pedestals are disconnected from the power source.
 - **With an NT682, QBL12, or QCA13**, remove the associated 30-amp fuse.
 - **With a QBL15**, set the circuit breaker to OFF (or remove the main fuse).
- 2 At the rear of the pedestal, remove the plastic safety cover over the terminal block to access the safety ground/protective earth lugs (leave the cover off until all pedestal connections are made):
 - Loosen the three screws holding the cover.
 - Lift the cover up, then over the three mounting screws on the front panel of the cover.
- 3 Connect the safety ground/protective earth wire:

Note: Insulated ground wire must be used for system grounding.

For a single-column system, connect a #6 AWG wire from the ground source in the service panel to a ground lug on the pedestal.

For a multiple-column system, connect a #6 AWG wire from the ground source in the service panel to a ground lug on the closest column. Daisy-chain #6 AWG ground wires from one pedestal to the next, connecting all of the columns (or run a #6 AWG wire from the ground source to each column individually).



Note: With the NT7D67CB PDU, the safety ground/protective earth wire must be routed within the cable-tie saddles and under the cable restraint bar at the base of the pedestal.

- 4 Place a warning tag (WARNING—TELEPHONE SYSTEM GROUND CONNECTION—DO NOT DISCONNECT) on the connection at the ground source.

Connecting the PDU

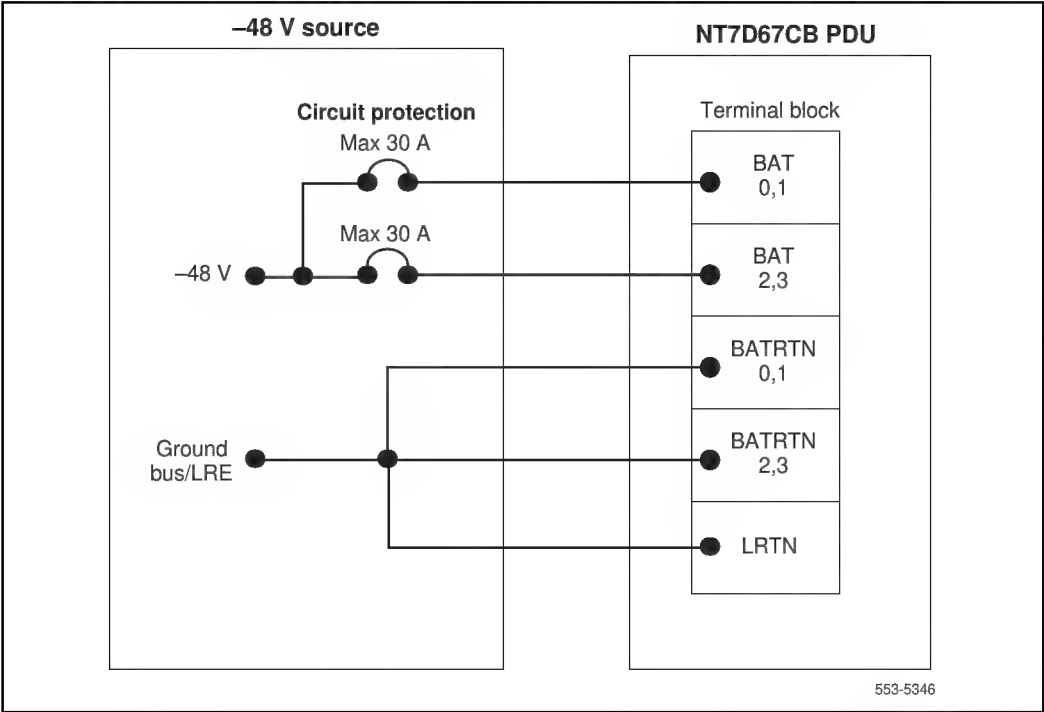
A readily accessible disconnect device for input power is required.

CAUTION

DC power for the NT7D09 Pedestal must be provided with circuit protection of 30 amps for the BAT 0,1 and BAT 2,3 feeds (see [Figure 176](#)).

Circuit breakers must be located next to each other and labeled to show that both must be shut off to remove all power to the system.

Figure 176
Circuit protection for the PDU



A maximum loop drop of two volts is allowed between the PDU, or junction box, and the external power equipment. See [Table 177](#) for allowable wire sizes. See *Meridian 1 power engineering* (553-3001-152) for detailed information on calculating wire size.

Note: Conduit is required with the NT7D10 PDU.

Figure 177

Wire gauge requirements with two 30-amp feeds (five wires)

Length	#8 AWG	#6 AWG	Single #4 AWG	Double #4 AWG
0–3 m (10 ft)	Yes	Yes	Yes	Yes
3–6 m (20 ft)	Yes	Yes	Yes	Yes
6–9 m (30 ft)	Yes	Yes	Yes	Yes
9–12 m (40 ft)	Yes	Yes	Yes	Yes
12–15 m (50 ft)	Yes	Yes	Yes	Yes
15–18 m (60 ft)	No	Yes	Yes	Yes
18–21 m (70 ft)	No	Yes	Yes	Yes
21–24 m (80 ft)	No	Yes	Yes	Yes
24–27 m (90 ft)	No	No	Yes	Yes
27–30 m (100 ft)	No	No	Yes	Yes
30–60 m (200 ft)	No	No	No	Yes
over 60 m (200 ft)	No	No	No	No

Note 1: Two 30-amp feeds are typically adequate for a column with four modules (five wires total—two 30-amp feed pairs plus logic return).

Note 2: If dual conduit is used, the wires must be run in battery/battery return pairs, with one pair in one conduit and the other pair, plus logic return, in the other conduit.

Legend: Yes = Wire size is adequate for the distance.
 No = Wire size has too high a voltage drop and is inadequate for the distance.

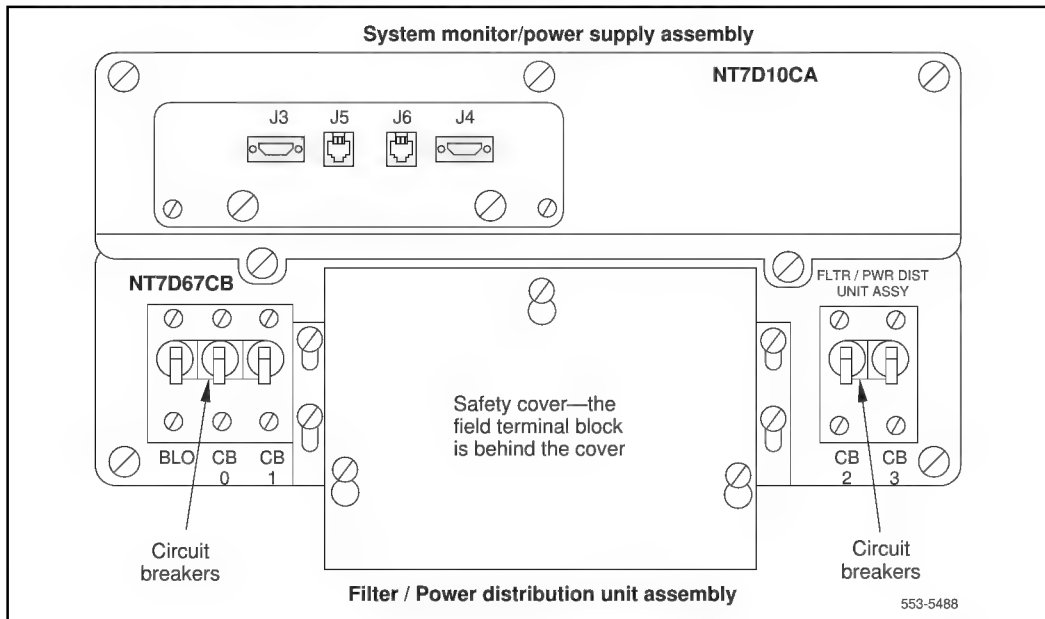
The following equipment is located in the rear of each pedestal (see [Figure 178](#)) in Meridian 1 columns:

- The PDU distributes power to the entire column.
- The field wiring terminal provides the connection point for wiring brought into the pedestal.
- A circuit breaker is provided for each module in the column and for the blower unit.

Note: All column circuit breakers will trip if a column thermal overload is detected or a DC-power low-voltage condition is sensed.

- The system monitor checks the column temperature, cooling system status, and system voltage status, and controls alarms and line transfer states accordingly.

Figure 178
DC power equipment in the rear of the pedestal—NT7D67CB PDU

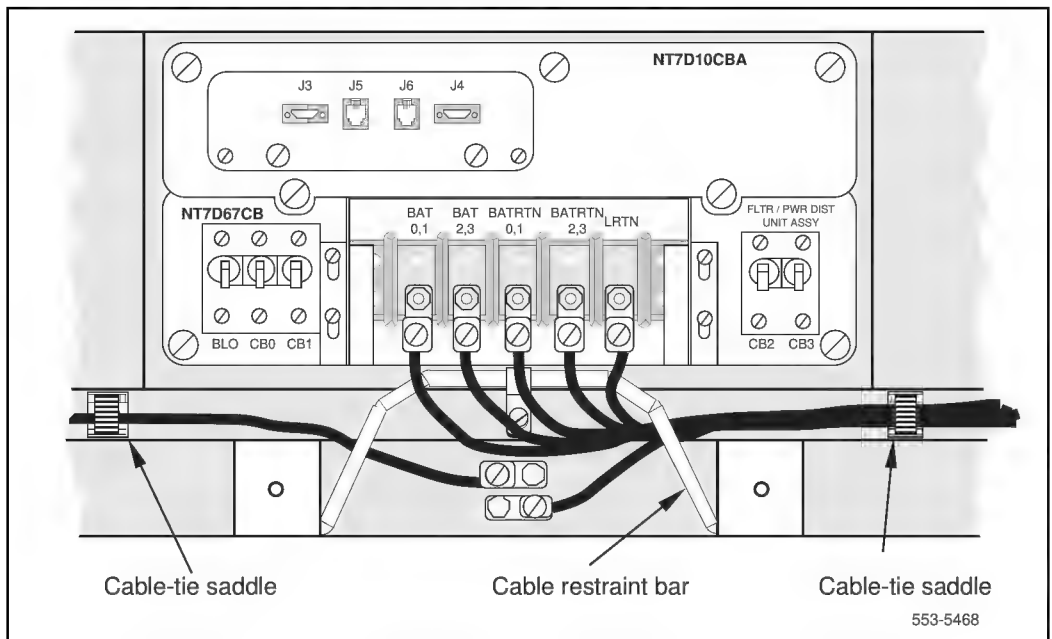


With the NT7D67CB PDU, the safety ground/protective earth wires and all wiring to the terminal block in the PDU must be routed within the cable-tie saddles and under the cable restraint bar at the base of the pedestal (see [Figure 179](#)).

Conduit is **not** required with the NT7D67CB PDU. However, 1-1/4 or 3/4 in. conduit can be used if local codes or individual installations require it. Conduit can be routed down through the column from overhead racks or up through the floor. Conduit clamps and the hardware to fasten the conduit are provided in the pedestal. If the NT7D0902 Rear Mount Conduit Kit is used, conduit can enter from the rear of the column (above the floor).

Note: If you are connecting the power system to a vintage AA or DA NT7D10 PDU, go to Appendix B: “NT7D10 PDU connections” on page 455.

Figure 179
Cable routing in the rear of the pedestal—NT7D67CB PDU



Preparing the NT7D67CB PDU

When a system is shipped, a set of screws secures the leveling bracket at the rear of the NT7D67CB PDU to protect the PDU from vibration damage during transit. The shipping screws should be removed during initial installation.

- 1** For access to the rear of the PDU, temporarily remove the blower unit in the front of the pedestal:
 - Turn the screws on the front of the blower unit counter-clockwise.
 - Grasp the lip at the top edge of the blower unit. Slide the unit out of the glides and onto the bottom ledge of the pedestal. Lift the unit out of the pedestal. (Keep the blower unit in an upright position.)
- 2** Remove the two shipping screws holding the PDU to the vertical shield in the pedestal.
- 3** Reinstall the blower unit:
 - Set the blower unit on the bottom ledge of the pedestal.
 - Tilt the back of the blower unit up slightly so it will slide into the pedestal glides (you may need to lift the unit). Gently push the unit into position.
 - Tighten the screws on the front of the blower unit.

Connecting power to the NT7D67CB PDU

To connect the external power system to the PDU, use the following procedure for each column (this procedure gives the connections for a four-module column).

Note: All wiring to the PDU must be routed within the cable-tie saddles and under the cable restraint bar at the base of the pedestal.

- 1 If a junction box is used, insert the conduit from the junction box into one of the conduit access holes in the pedestal.

Connect the wires from the junction box to the matching connections on the terminal block on the PDU:

- Connect the red wires to BAT 0,1 and BAT 2,3.
- Connect the black wires to BATRTN 0,1 and BATRTN 2,3.
- Connect the remaining wire (orange or white) to LRTN.

Note: If a junction box is used, the connections described in steps 2 through 4 apply to the junction box rather than the PDU.

- 2 Connect the red BAT (–48 V) wires:

- At the power plant:

For an NT6D82, connect the wires to the first two circuit breakers in the main control/distribution panel (see [Figure 180](#)).

For a QBL12 or QCA13, connect the wires to the first two available 30-amp fuse output connections on the –48 V terminal panel (see [Figure 181](#)).

Note: Each 30-amp fuse output has two connection points on the distribution panel. Only one 30-amp connection point is required for every two modules; typically, #6 AWG is adequate (#4 AWG can be used).

For a QBL15, connect the wires to terminals 1, 2, 3, or 4 (DISCHARGE) on TB1 (see [Figure 182](#)).

- At the PDU, connect the wires to the terminal block (one wire feeds two modules):
 - For modules 0 and 1, connect to BAT 0,1.
 - For modules 2 and 3, connect to BAT 2,3.
- 3 Connect the black BATRTN (48 V return) wires:
 - At the power plant:
 - For an NT6D82**, connect two wires to the ground bus/LRE.
 - For a QBL12 or QCA13**, connect two wires to the LRE.
 - For a QBL15**, connect two wires to the positive bus.
 - At the PDU, connect the wires to the terminal block (one wire feeds two modules):
 - For modules 0 and 1, connect to BATRTN 0,1.
 - For modules 2 and 3, connect to BATRTN 2,3.
- 4 Connect the LRTN wire (orange or white):
 - At the power plant:
 - For an NT6D82**, connect the wire to the ground bus/LRE.
 - For a QBL12 or QCA13**, connect the wire to the LRE.
 - For a QBL15**, connect the wire to the positive bus.
 - At the PDU, connect the wire to LRTN on the terminal block.
- 5 Reinstall the plastic safety cover over the terminal block:
 - Lower the front panel over the mounting screws on the PDU.
 - Tighten the three screws holding the cover.
- 6 Close the covers on the power plant.

Figure 180
PDU to NT6D82 connections

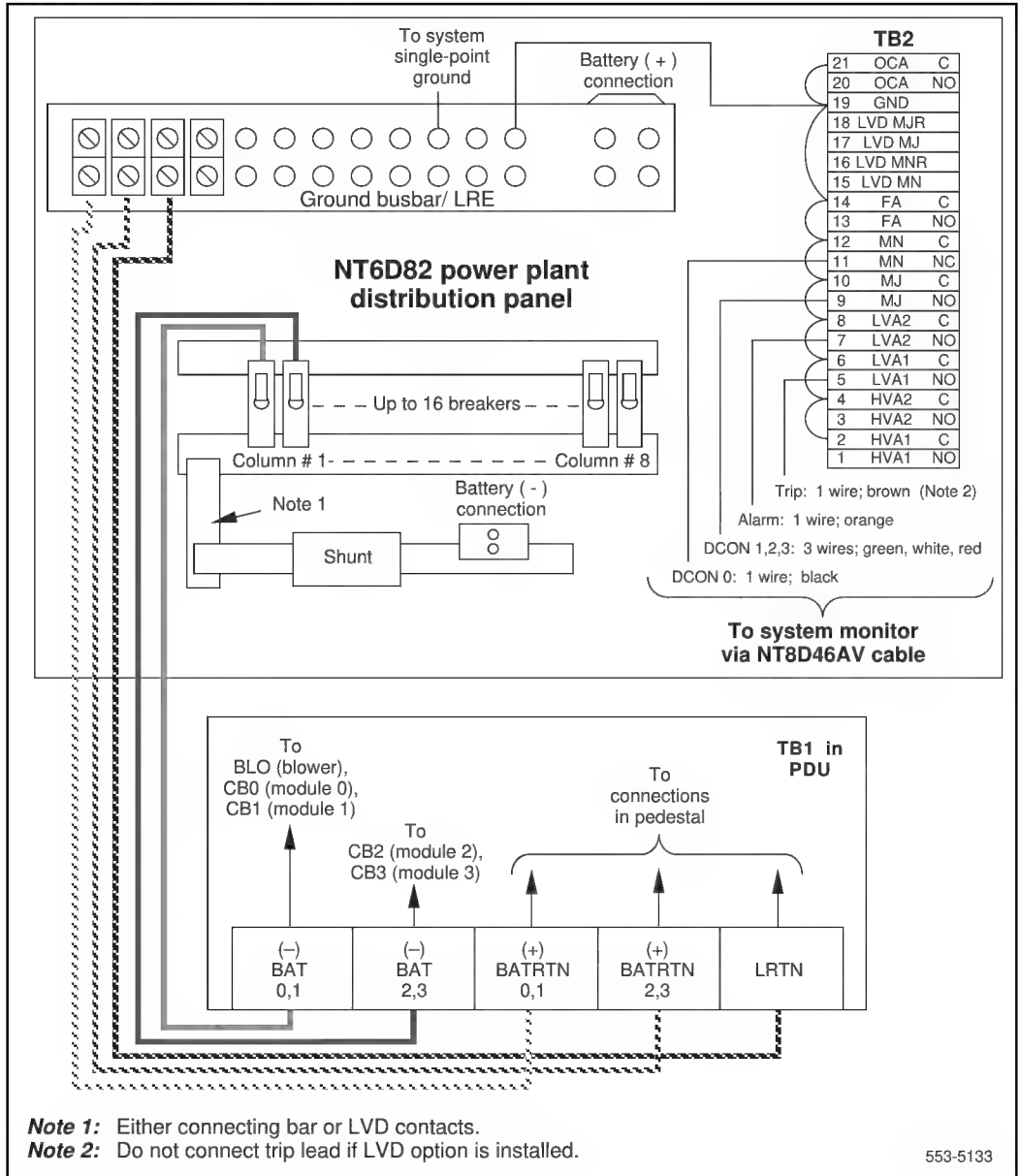
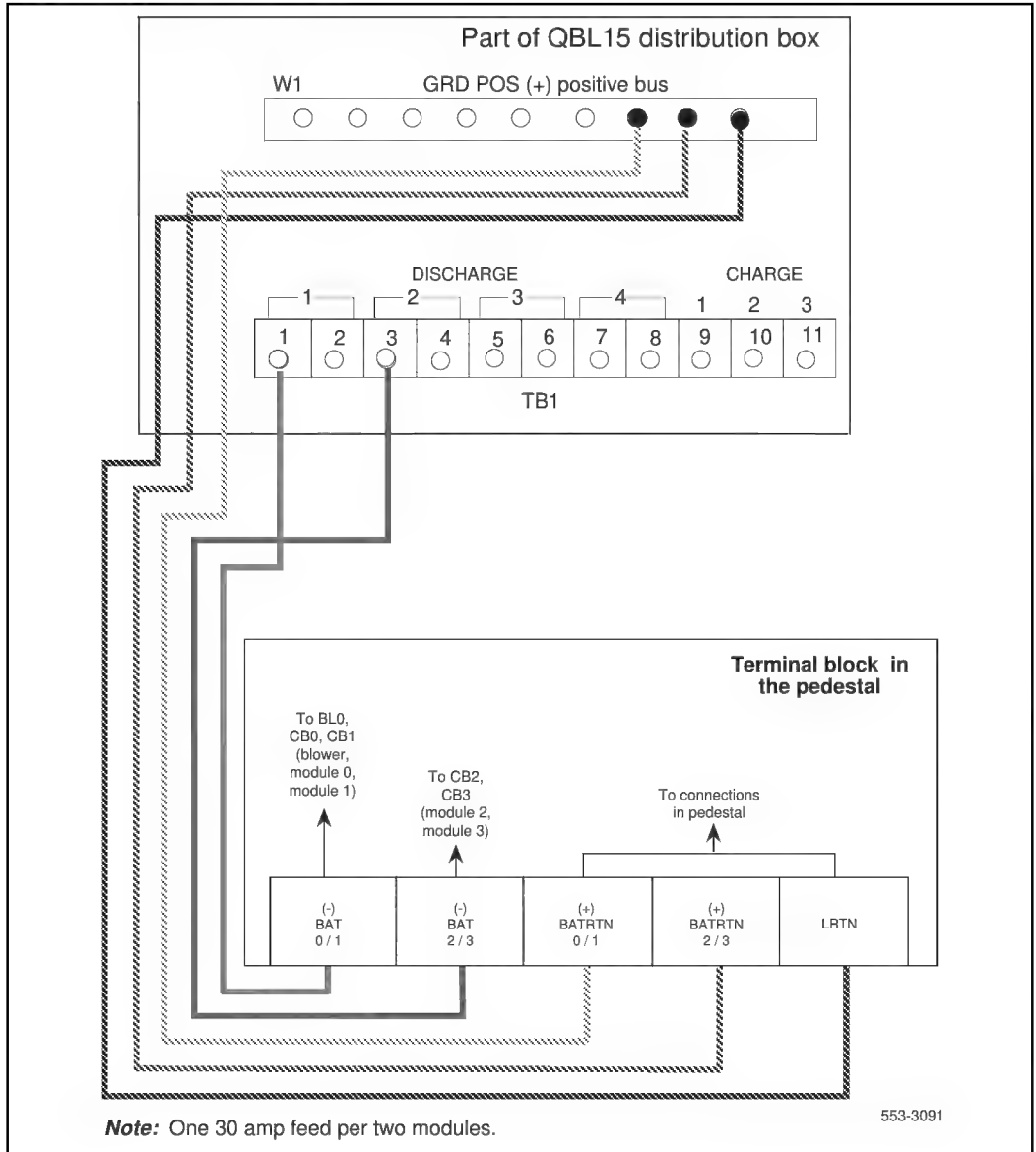


Figure 182
PDU to QBL15 connections



Connecting the NT8D22 system monitor

See “Configuring the system monitor” on page 93 to

- configure system monitor switch settings
- cable the system monitor to the SDI port
- cable system monitors in a multiple-column Meridian 1
- cable the system monitor to PFTUs or external alarms

Use the following cables to extend the alarm and trip leads from connector J4 on the master system monitor to the external power equipment (conduit is not required):

- **For an NT6D82**, use an NT8D46AV cable (see [Table 117](#)).
- **For a QBL12**, use an NT8D46AW cable (see [Table 118](#)).
- **For a QBL15**, use an NT8D46AT cable (see [Table 119](#)).
- **For a QCA13**, use an NT8D46AV cable (see [Table 120](#)).

An NT8D46BV cable, 20 m (64 ft), or NT8D46CV cable, 33 m (100 ft), can be used instead of the NT8D46AV cable. Connections are the same as the NT8D46AV cable.

Table 117
NT6D82 alarm and trip lead connections—NT8D46AV cable

Color	Description	Connection at TB2 in the NT6D82
BL	DCON 0	MNA (NO), position 11
R	DCON 1*	MJA(NO), position 9
W	DCON 2*	MJA(NO), position 9
GR	DCON 3*	MJA(NO), position 9
OR	Alarm	LVA2 (NO), position 7
BL	not used	—
BR	not used	—
Y	not used	—
V	not used	—
* Connect the red, white, and green wires together at MJA.		

Table 118
QBL12 alarm and trip lead connections—NT8D46AW cable

Color	Description	Connection at TB3 in the QBL12
BL	DCON 0*	Terminal 6
R	not used	—
W	not used	—
GR	not used	—
OR	Alarm	Terminal 3
BL	not used	—
BR	Trip	Terminal 4
Y	not used	—
V	not used	—
* Also terminate the DCON connection from the rectifier on terminal 6.		

Table 119
QBL15 alarm and trip lead connections—NT8D46AT cable

Color	Description	Connection at TB2 in the QBL15
BL	DCON 0	*
R	DCON 1	*
W	DCON 2	*
GR	not used	—
OR	Alarm	Terminal 5
BL	not used	—
BR	Trip	Terminal 6
Y	not used	—
V	not used	—

* The A0290885 male connector in the QBL15 connects the DCON wires from the rectifiers to the A0290886 female connector on the end of the NT8D46AT cable. See ["Connecting NT0R72 rectifiers to the QBL15 distribution box" on page 428](#) to install the A0290885 connector.

Table 120
QCA13 alarm and trip lead connections—NT8D46AV cable

Color	Description	Connection at TSA in the QCA13
BL	not used	—
R	not used	—
W	not used	—
GR	not used	—
OR	Alarm	Terminal 50
BL	not used	—
BR	Trip	Terminal 49
Y	not used	—
V	not used	—